What is claimed is:

1. A printed circuit board having:

a multilayer substrate;

a via hole penetrating said multilayer substrate;

a surface wiring wired on the surface of said multilayer substrate and connected to a first end which is one end of said via hole;

at least one inner layer wiring formed inside said multilayer substrate and connected to a portion other than upper and lower ends of a conductive part of said via hole; and

a current-carrying element connected to a second end having no said surface wiring connected thereto on an opposite side to said first end of the conductive part of said via hole; and wherein:

said current-carrying element has an electrical length by which a value of an impedance at a predetermined frequency is larger than a predetermined value on seeing said current-carrying element side from a first connection point closest to said second end, of the connection points between said inner layer wiring and the conductive part of said via hole; and

said predetermined value is the value of the impedance at the predetermined frequency on seeing said second end side

from said first connection point in the case where said current-carrying element does not exist.

2. The printed circuit board according to claim 1, wherein the total of the electrical length from said first connection point to said second end and the electrical length of said current-carrying element is substantially n/2 times (n is a natural number) a wavelength corresponding to said predetermined frequency, and the end of said current-carrying element is open.

3. The printed circuit board according to claim 1, wherein the total of the electrical length from said first connection point to said second end and the electrical length of said current-carrying element is substantially (2n - 1)/4 times (n is a natural number) a wavelength corresponding to said predetermined frequency, and the end of said current-carrying element is grounded.

4. The printed circuit board according to any one of claims 1 to 3, wherein a part of said current-carrying element is formed by a chip inductor.

5. The printed circuit board according to any one of claims 1 to 3, wherein a part of said current-carrying element is formed by at least one via hole.

6. The printed circuit board according to any one of claims 1 to 3, wherein a shape of said current-carrying element is substantially a sector.

7. The printed circuit board according to claim 1, wherein said current-carrying element is formed between predetermined layers between said first connection point and said second end and is connected to the conductive part of said via hole instead of being connected to said second end.

8. The printed circuit board according to claim 1, further having another via hole penetrating said multilayer substrate different from said via hole; and wherein:

said surface wiring is a differential signal line, and one end of said differential signal line is connected to the first end of said via hole and the other end of said differential signal line is connected to one end of said other via hole;

at least one inner layer wiring is connected to a portion other than upper and lower ends of the conductive part of said other via hole;

a current-carrying element other than said current-carrying element is connected to the other end of said other via hole;

of the conductive part of said via hole, the total of the electrical length from said first connection point to said second end and the electrical length of said current-carrying element is substantially $(2n-1)/4$ times (n is a natural number) a wavelength corresponding to said predetermined frequency;

of the conductive part of said other via hole, the total of the electrical length from the connection point closest

to said other end to said other end of the connection points to said inner layer wiring and the electrical length of said other current-carrying element is substantially (2n - 1)/4 times (n is a natural number) the wavelength corresponding to said predetermined frequency; and

the end of said current-carrying element and the end of said other current-carrying element are mutually connected.

9. A printed circuit board having:

a multilayer substrate;

a via hole penetrating said multilayer substrate;

a surface wiring wired on the surface of said multilayer substrate and connected to a first end which is one end of said via hole;

at least one inner layer wiring formed inside said multilayer substrate and connected to a portion other than upper and lower ends of a conductive part of said via hole; and

a series circuit of a resistor and a capacitor, and wherein:

said series circuit is connected, of the conductive part of said via hole, between a second end having no said surface wiring connected thereto on an opposite side to said first end and a first connection point closest to said second end, of the connection points between said inner layer wiring and the conductive part of said via hole.

10. The printed circuit board according to claim 9, wherein said resistor is a chip resistor connected to said second end;

said capacitor is formed by said inner layer wiring or inner layer pattern and a land as electrodes and a part of said multilayer substrate as a dielectric; and

said inner layer wiring or inner layer pattern is connected to said first connection point, said land is formed on a surface on which said second end exists and is connected to said chip resistor, and a part of said multilayer substrate is formed by being sandwiched between said inner layer wiring or inner layer pattern and said land.

11. A buildup substrate having the printed circuit board according to claim 1 and a substrate layer of at least one layer formed on said printed circuit board.

12. A method of manufacturing a printed circuit board having:

a step of connecting a current-carrying element to a second end having no surface wiring connected thereto on an opposite side to a first end of a via hole penetrating a multilayer substrate and having a surface wiring connected to said first end of a conductive part thereof; and

a step of determining an electrical length of said current-carrying element so that a value of an impedance at a predetermined frequency on seeing said current-carrying element side from a first connection point closest to said second end, of connection points between at least one inner

layer wiring connected to a portion other than said first end and said second end of the conductive part of said via hole and formed inside said multilayer substrate and the conductive part of said via hole, is higher than a predetermined value, and wherein:

said predetermined value is the value of the impedance at said predetermined frequency on seeing said second end side from said first connection point in the case where said current-carrying element does not exist.

13. A method of manufacturing a printed circuit board, wherein a series circuit of a resistance and a capacitor is connected between a second end having no surface wiring connected thereto on an opposite side to a first end of a via hole penetrating a multilayer substrate and having a surface wiring connected to said first end of a conductive part thereof and a first connection point closest to said second end, of connection points between at least one inner layer wiring connected to a portion other than said first end and said second end of the conductive parts of said via hole and formed inside said multilayer substrate and the conductive part of said via hole.

14. An electronic device having the printed circuit board according to claim 1 and electronic components mounted on the surface of or inside said printed circuit board.